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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/807,836

03/24/2004

Leonel R. Arana

ITL.1133US (P19113)

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21906

7590

03/20/2006

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EXAMINER

DOTY, HEATHER ANNE

ART UNIT

PAPER NUMBER

2813

DATE MAILED: 03/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/807,836	Applicant(s) ARANA ET AL.	
	Examiner Heather A. Doty	Art Unit 2813	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 January 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10-27 is/are allowed.
- 6) ☒ Claim(s) 1-3, 8 and 9 is/are rejected.
- 7) ☒ Claim(s) 4-7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless – (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Najafi et al. (U.S. 6,140,144).

Regarding claim 1, Najafi et al. teaches a method comprising microfabricating a vacuum sensor (**1** in Fig. 7D; claim 58—pressure sensor); enclosing said vacuum sensor with an integrated circuit inside an enclosure (**22** in Fig. 7D; column 10, lines 40-43); and supporting said sensor in a raised portion over a substrate on an upwardly extending contact (note vertical portion of sensor **4** in Fig. 7D).

Regarding claims 2 and 3, Najafi et al. teaches the method of claim 1, and further teaches integrating said vacuum sensor and said integrated circuit in the same substrate, or integrating said vacuum sensor and said integrated circuit on separate dice and enclosing said separate dice in the same enclosure (column 10, lines 40-43).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Najafi et al. (U.S. 6,140,144) in view of Staller (U.S. 6,074,891).

Regarding claim 8, Najafi et al. teaches the method of claim 1 (note 35 U.S.C. 102(b) rejection above), but does not teach providing an enclosure that covers said vacuum sensor and said integrated circuit and provides a hermetically sealed chamber.

Staller teaches providing an enclosure that covers a micromachined vacuum sensor and integrated circuit and provides a hermetically sealed chamber (column 3, lines 36-40). Staller further teaches that it is necessary to provide absolute pressure sensors with a hermetically sealed chamber (column 1, lines 27-32).

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art to use the method taught by Najafi et al. and further seal the enclosure hermetically, as taught by Staller. The motivation for doing so at the time of the invention would have been to allow the vacuum sensor to operate as an absolute pressure sensor, as taught by Staller.

Regarding claim 9, Najafi et al. and Staller together teach the method of claim 8. Staller further teaches providing an electrical connection under the enclosure to the exterior of the chamber (conductive runners 22 in Fig. 2).

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art to use the method taught by Najafi et al. and Staller together, and further provide an electrical connection under the enclosure to the exterior of the chamber, as further taught by Staller, to provide electrical access to the sensor and

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circuit from outside the sealed chamber, which Staller teaches is conventional (column 3, lines 20-25).

Response to Arguments

Applicant's arguments filed 1/17/2006 have been fully considered. In paragraph 2 of the remarks, Applicant states that the inclusion of a U-shaped contact is believed to be responsible for the indication of allowable subject material in the Office action dated 11/16/2005. However, this is not the case. The subject material contained in those claims indicated allowable was the vertical portion extending upwardly from the contact to the wire, *in combination with the other claimed limitations*. Applicant amended independent claims 1, 10, and 20 to include this limitation. Applicant additionally amended claims 10 and 20 to include a serpentine wire. Since claim 1 does not include the limitation of the serpentine wire or another feature not taught by Najafi et al., the examiner believes that claim 1 remains unpatentable over Najafi et al, as detailed above.

Allowable Subject Matter

Claims 4-7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 10-27 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claims 4-7 and 10-27, prior art does not teach or suggest, in combination with the other claimed limitations, a vacuum sensor microfabricated as a serpentine wire supported over a substrate on an upwardly extending contact.

As stated in the Office action dated 11/16/2005, Kishi et al. teaches a vacuum sensor comprising a suspended serpentine wire with contacts on top of the wire. The suspended wire is fabricated from silicon by etching away material beneath the wire and forming a ditch (drawing 4). Therefore, no vertical portion extends upwardly from the contact to the wire. Kawamura teaches a thermistor sensor directly deposited on the contacts, with no intervening vertical portion. There is no motivation to combine other relevant prior art with either of these references to arrive at a sensor including a vertical portion extending upwardly from a contact to a suspended wire.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Heather A. Doty, whose telephone number is 571-272-8429. The examiner can normally be reached on M-F, 8:30 - 5:00.

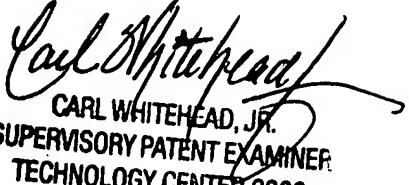
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead, Jr., can be reached at 571-272-1702. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

had


CARL WHITEHEAD, JR.
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800